Nova Scotia 2013
Pavement Preservation

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Highway Construction Services

Transportation and Infrastructure Renewal
Introduction

• Pavement preservation treatments
• 2013 preservation totals
• 2013 project reviews
• 2014 budget / spec. changes / new treatments
• Summary
Pavement Preservation Treatments

• Micro-surfacing: 2 year warranty spec.
• Seal Coat (Type A & B): 1 year warranty spec.
• Department’s in-house pavement preservation program:
  • Seal Coat introduced 2011
  • Single lift asphalt paving 2012
Pavement Preservation

Unlike many other provinces, the Province of Nova Scotia is responsible for maintaining the majority of all public roads in the province (90 per cent) -- 23,000 kilometres. The cost per kilometre is over $300,000 to repave, $500,000 to $750,000 or more to upgrade a trunk highway, and $3 million to twin a highway. While severely damaged roads will continue to be addressed, a portion of our highway improvement budget will be set aside to help improve paved roads before they become too damaged and need more costly repairs. The approach is ensuring that funding is used more efficiently and effectively. It is more sustainable in the long term.

Pavement Preservation is cost effective. Spending one dollar on pavement preservation before a paved road is 15 years old can eliminate or delay having to spend 6 to 14 dollars on rehabilitation or reconstruction when the pavement surface has failed.

Preservation techniques can extend the life of asphalt, improve smoothness, reduce potholes and decrease rutting and cracking. Roads stay smoother and safer at a much lower cost than by allowing them to deteriorate to the point of needing full reconstruction.

Pavement Preservation

Crack sealing: rubberized asphalt seal compound prevents water from penetrating the paved surface and weakening of the road base

Chip sealing: asphalt mixture with stone chips applied to protect and seal pavement showing minor distress

Micro sealing: thin asphalt mixture applied to existing pavement that is showing signs of premature surface distress, to protect pavement and repair ruts

Single lift overlay: single layer of asphalt pavement to correct minor-to-moderate surface distress in relatively good quality pavement

Maintenance Paving: placing a single lift of asphalt on rougher road sections to improve the ride

Surface Stabilization

Surface stabilization involves using many methods to improve local low-volume roads leading to smoother, dust-free roads for drivers and communities

Black gravel: mixture of recycled asphalt and gravel that provides additional strength, improves driving surface and emits very little dust

Double chip seal paving: aggregate mixed with tar applied over gravel for a smoother dust-free surface and reduced potholes; or mixed with gravel and applied over pulverized asphalt, which does all of the above and adds strength

Asphalt concrete paving: applying one or more layers of asphalt to strengthen and smooth the surface, includes improvements to drainage culverts and ditches
100-series highways These are the highest traffic volume roads in Nova Scotia and many are part of the National Highway System.

Secondary highways, Trunks, and Routes Lower traffic volumes than 100-series highways, but well used to connect local communities.

Provincial local roads Local paved and gravel roads with much lower traffic volumes, sometimes less than 500 vehicles per day.

NS CL Road Lengths:
Paved: 14020 km (8692 mi)
Unpaved: 9012 km (5587 mi)
<table>
<thead>
<tr>
<th>Type:</th>
<th>Projects:</th>
<th>CL Length (mi.):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tendered Projects:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro-Surfacing:</td>
<td>5</td>
<td>51</td>
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<tr>
<td>Seal Coat Type A:</td>
<td>3</td>
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<td>Seal Coat Type B:</td>
<td>9</td>
<td>72</td>
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<tr>
<td>CIR:</td>
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<td>7</td>
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<td>FDR:</td>
<td>6</td>
<td>22</td>
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<tr>
<td><strong>NSTIR:</strong></td>
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<td></td>
</tr>
<tr>
<td>Seal Coat Type A:</td>
<td>30</td>
<td>114</td>
</tr>
<tr>
<td>Thin Lift Overlay:</td>
<td>20</td>
<td>54</td>
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Nova Scotians have given Stephen McNeil and the Liberals a decisive victory with a majority government, turining Atlantic Canada's first NDP government and tossing Premier Darrell Dexter out of his own seat in Cole Harbour-Portland Valley.

"The people of Nova Scotia have agreed with our plan to put Nova Scotia first," Premier-designate McNeil told the cheering group crowded into the Bridgetown Curling Club.

"It is with a deep sense of responsibility and purpose that I will make certain our plan is delivered and that our commitments are kept."

McNeil's victory also marks the first time in 131 years that Nova Scotians haven't given an incumbent party a second chance at running the province.

The Liberals were elected in 33 of the province's 51 ridings while the Progressive Conservatives, captured 11 ridings and the New Democrats trailed.
Mobile asphalt plant being sold, 1.5 years after purchase

Transportation minister says decision to purchase plant for $3.5M was not in taxpayers best interest

The Canadian Press   Posted: Feb 26, 2014 7:08 PM AT   Last Updated: Feb 26, 2014 7:08 PM AT

In 2011, the New Democratic government announced it was buying the mobile paving plant and said it would save taxpayers millions of dollars every year. The government said private contractors were charging too much to pave rural roads. (CBC)

The government of Nova Scotia is putting its mobile asphalt plant up for sale, a year and a half after it went into operation.

The province's Transportation Department has brought in General Combustion Corp. to advertise and market the plant on its behalf beginning Monday.

General Combustion originally built and sold the plant to the previous NDP government in 2011 for $3.6 million.
Nova Scotia Asphalt Plant (2011-2013)

We Hardly Knew Ye!
Project Reviews

• Visual assessment of several 2013 preservation sections in Feb./March 2014
• Areas of concern noted by Project Engineers in fall 2013 on some projects
• Issues to be addressed in Spring 2014
Micro
Completed August 2013
Photo March 2014
3500 AADT
Micro
Completed August 2013
Photo March 2014
3500 AADT
Micro
Completed August 2013
Photo March 2014
3500 AADT
Seal Coat Type A:
Completed August 2013
Photo March 2014
950 AADT
Seal Coat Type A: Comple...
Seal Coat Type A:
Completed August 2013
Photo March 2014
1980 AADT
Seal Coat Type A:
Completed August 2013
Photo March 2014
1980 AADT
Seal Coat Type A: Completed August 2013
Photo March 2014
1980 AADT
Seal Coat Type B: Completed Sept 2013
Photo Nov 2013
Seal Coat Type B:
Completed Sept 2013
Photo Nov 2013
Seal Coat Type B: Completed Sept 2013
Photo Nov 2013
Seal Coat Type B:
Completed Sept 2013
Photo Feb 2014
Seal Coat Type B:
Completed Oct 2013
Photo March 2014
200 AADT
Seal Coat Type B:
Completed Oct 2013
Photo March 2014
200 AADT
Seal Coat Type B:
Completed Sept 2013
Photo March 2014
120 AADT
Seal Coat Type B:
Completed Oct 2013
Photo March 2014
200 AADT
Full Depth Reclamation

- Issues with several projects:
  - Centreline cracking - Single lift overlays
  - Frost heaving on several projects
  - Subgrade issues during construction:
    - Deflection during proof-rolling
    - Clay till

Transportation and Infrastructure Renewal
FDR + Single lift O/L:
Constructed July 2013
Photo Feb 2014
1150 AADT
FDR + Single lift O/L: Constructed July 2013
Photo Feb 2014
1150 AADT
FDR + Single lift O/L: Constructed August 2013
Photo March 2014
200 AADT
FDR (150 mm):
August 2013
500 AADT
FDR (150 mm):
August 2013
Removal of soft subgrade
FDR + Single lift O/L: 
Constructed August 2013 
Photo March 2014 
500 AADT
Highway Funding in Nova Scotia 2014-2015

The total highway capital budget for 2014-15 is $235 million. Additional operational funding for highway maintenance will be made available as part of the 2014-15 budget.

Capital funding for highway construction and maintenance comes from three sources:

- **Provincial** -- $209,300,000
  Highway funding in Nova Scotia includes all revenues collected through provincial gas taxes and registration of motor vehicles, as well as other funding provided by the provincial government.

- **Federal** -- $25,500,000
  Federal money to support highway improvement projects will be provided by the Building Canada Plan.

- **Municipal** -- $1,000,000
  Municipalities contribute on cost-shared projects in their areas.

### How capital funding is invested

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Major construction (new highways and bridges)</td>
<td>$70,000,000</td>
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<tr>
<td>Asphalt and resurfacing</td>
<td>$114,300,000</td>
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<td>Bridge replacement/rehabilitation</td>
<td>$35,500,000</td>
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<td>Land purchase</td>
<td>$4,000,000</td>
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<td>Equipment, machinery, ferries</td>
<td>$9,500,000</td>
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<tr>
<td>Highway designs, surveys, studies</td>
<td>$1,700,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$235,000,000</strong></td>
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## 2014 Preservation Treatments

### Preservation Budget ($ Million)

<table>
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<tr>
<th>Treatment</th>
<th>Budget ($ Million)</th>
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<tbody>
<tr>
<td>Micro-Surfacing</td>
<td>4.0</td>
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<tr>
<td>Seal Coat Type A</td>
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<td>Seal Coat Type B</td>
<td>9.5</td>
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### Reclamation Projects:

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<th>Projects</th>
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<td>20</td>
</tr>
<tr>
<td>FDR</td>
<td>1</td>
<td>5</td>
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</table>
Changes / New Treatments

• Specification change - Prime requirement removed for Seal Coat Type B:
  • Concerns over use of cut-back solvent
• Bio-Solvent emulsion prime trial planned:
  • Low VOC, similar penetration formulation
• Hot In-Place reclamation trial:
  • Create specification, candidate selection
Summary

• Budget for TIR seal coat / repaving program lost ($10 M)
• Better candidate selection for all treatments
• Attention to workmanship key
• Assessment of 2013 projects to continue…if winter ends…. 
April in Nova Scotia
Questions?